with the methods and apparatus described and claimed by Kawabe. Accordingly, Kawabe does not describe new electret material or articles.

Kawabe describes an electret article as "a dielectric article at least a portion of which [particularly the surface] is polarized" (col. 5, lines 17-18). Electret materials are materials that are capable of having a high quantity trapped charge stably existing for a long period of time. See for example U.S. Patent no. 5,057,710 to Nishiura et al. More specifically, an electret material is a "dielectric material that exhibit[s] a quasi-permanent charge. The term quasi-permanent means that the time constants for the decay of the charge are much longer than the time periods over which the studies are performed (see Exhibit A of the Response mailed February 27, 2001). A dielectric material is a nonconductor of electricity , especially a substance with electrical conductivity less than a millionth (10^{-6}) of a siemens (definition of "dielectric" from page 386 of the The American Heritage® College Dictionary third edition). A dielectric material becomes an electret when the rate of decay of the filed-induced polarization can be slowed down so much that a significant fraction of the polarization is preserved long after the polarizing field has been removed (page 1, lines 27-29 of the present application).

Kawabe describes piezoelectric and pyroelectric articles as "electret articles wherein not only the surfaces and the portions adjacent thereto, but also deep insides are polarized" (col. 5, lines 29-31) . Kawabe's unconventional definition of an "electret article" found in column 5, lines 14-53, defines the term to mean two types of "electrets". The first type of electret included in Kawabe's definition is those electrets with charges trapped mainly on the surface of the article being treated. The second type of "electret" included in Kawabe's definition are those "electrets" with micropolorization distributed throughout the volume of the treated article. Those skilled in the art conventionally define an electret to include only the first class identified by Kawabe. The second class of materials Kawabe that defines as "electrets" is conventionally referred to as "ferroelectrics", and those skilled in the art recognize that conventional ferroelectrics are not electrets. Piezoelectric materials are materials that exhibit an induced polarization (electrical charge) resulting from an applied stress. Polarization is the partial or complete separation of positive and negative electrical charge in a system (definition of "polarization" from page 386 of The American Heritage® College Dictionary third edition) . Pyroelectric materials are a subset of piezoelectric materials where the applied stress that induces polarization in the materials is induced by a change in temperature that causes thermal expansion which induces the polarization. Ferroelectric materials are

materials in which the polarization can be reoriented by the application of a electric field of a magnitude lower that the dielectric breakdown strength of the material.

Kawabe lists inorganic ferroelectric materials such as barium titanate (col. 5, line 45) and also states that barium titanate is a piezoelectric material (col. 5, line 51-52). However, Kawabe goes on to state that an electret article of barium titanate "hardly produce[s] an electric field outside of the electret article (col. 5, lines 51-53). Thus, Kawabe suggests that barium titanate is a poor electret material. Importantly, Kawabe teaches that barium titanate when electret treated hardly produces an electric field outside of an electret article. Therefore, it would not have been obvious to produce a face mask using barium titantate as an electret material to attract and filter particles, especially particles having a surface charge, if barium titanate face masks hardly produce a an electric field outside the article, i.e. a face mask, as the last Office Actions suggest. Kawabe provides no motivation to incorporate barium titanate into a face mask. More particularly, Kawabe provides no motivation to incorporate barium titanate into thermoplastic polymer fibers and include those fibers in a face mask. When discussing face masks, Kawabe does not disclose novel face mask or even novel materials for use in face masks. Kawabe describes electret treating prior art face masks with his novel apparatus and related process so that a face mask can be electret treated after the face mask is formed (col. 6, lines 24-37). Kawabe does not disclose, teach or suggest a face mask comprising a nonwoven web of thermoplastic polymer fibers wherein the thermoplastic polymer fibers have a ferroelectric material dispersed therein.

Although Kawabe lists several electret materials and several types of electret materials in conjunction with the method and apparatus of his invention, Kawabe does not provide motivation to combine a ferroelectric material and a thermoplastic polymer. More specifically, Kawabe does not provide motivation to combine a polyolefin a polyolefin and a perovskite, a tungsten bronze, bismuth oxide layered material, or a pyrochlore and even more specifically to combine a polypropylene resin and barium titanate, lead titanate or a perovskite. Kawabe merely lists potential materials for use in the apparatus and method of his invention. The Examiner's motivation to combine a ferroelectric material and a thermoplastic polymer comes from the present application. Applicants respectfully submit that it would not have been obvious to a person of ordinary skill in the art to include a ferroelectric material in thermoplastic polymer and then from fibers from the thermoplastic polymer containing the ferroelectric material to form a component of a face mask. The lists provided in Kawabe are shopping lists of

materials such as dielectric materials and ferroelectrics and are not necessarily and automatically combinable. There must be motivation to combine the claimed materials. It would not have been obvious to pick and choose randomly from the lists provided by Kawabe. Applicants submit that the Examiner used the present patent application and the claims contained therein as a guide to pick and choose the presently claimed components.

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior are to deprecate the claimed invention." (Chisum on Patents quoting In *re* Fine, F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988), *on remand*, 13USPQ2d 1192 (D. Conn. 1989)). "Hindsight...is quite improper when resolving the question of obviousness. To use the patent in suit as a guide through the morass of prior art references, combining the right references in the right way to arrive at the result of the claims in suit is ...also quite improper." (Chisum on Patents *quoting* Medtronic, Inc. v. Daig Corp., 611 F. Supp. 1498, 1534, 227 USPQ 509, 535 (D. Minn, 1985), *aff'd* 789 F.2d 903, 229 USPQ 664 (Fed Cir. 1986), *cert denied*, 479 U.S. 931 (1986)). "[I]t is not permissible to first ascertain factually what the inventors did and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and then utilized to reconstruct the claimed invention." (Chisum on Patents *quoting* Twin Disc, Inc. v. United States, 10 Cl. Ct. 713, 731, 231 USPQ 417, 425 (Cl. Ct. 1986)). "The motivation to combine references can not come from the invention itself." (Chisum on Patents *quoting* Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc. F.3d 1068, 1072 30 USPQ2d 1377, 1380 (Fed. Cir. 1993)).

Furthermore, Kawabe does not disclose, teach or suggest how to incorporate a ferroelectric material in a thermoplastic polymer. Kawabe only teaches how to electret treat materials such as ferroelectric materials and polyolefin fabrics. All of the polyolefin fabrics described by Kawabe do not include a ferroelectric material. Applicants surmise that Kawabe did not know how to successfully incorporate particles of a ferroelectric material in a polyolefin or any other thermoplastic materials.

Applicants request the examiner to reread Kawabe in its entirety. Applicants solicit the Examiner to grant Applicants an interview to further explain the relevance of U.S. Patent No. 6,001,299 to Kawabe et al. Applicants hereby request an Interview with the Examiner and request the Examiner to contact Applicant at (770) 587-8620 to set up a time to Interview the present patent application and advance the prosecution of the

present patent application in the event that the Examiner has considered the remarks contained in this Response and still considers the claims not allowable.

Applicants submit that the Examiner's reliance on the cited Japanese Patent Abstracts is inappropriate. JP 63288216A discloses 10-80wt% electroconductive particles and 0.1-10wt% of dielectric particles. The combination of these particles acts as an anti-static agent. This Japanese Abstract does not teach an electret material, i.e. a material having a sustained electrostatic charge. Removing the electroconductive particle from the invention disclosed in the '216 abstract, as the Examiner seems to have suggested, would give rise to a material which is no longer an anti-static agent and therefore would destroy the inventor's original intent and be against all of the teachings therein. Furthermore, because the teachings of the '216 abstract is counter-instructive to that suggested by the Examiner, there appears to be no motivation for the Examiner's suggestion that one skilled in the art would have removed the electroconductive particle in '216 reference to achieve the invention of the present application. That is one skilled in the art would not seek to form an electret and impart a permanent electrostatic charge to an anti-static fiber. Moreover, since the fibers of the Japanese Abstract comprise anti-static fibers that contain a considerable amount of electroconductive particles it is believed uncertain as to whether it would be possible to form an electret from such materials.

JP 0126310A discloses an anti-static fiber containing semiconducting barium titanate ($BaTiO_3$). Semiconducting $BaTiO_3$ is formed by sintering ultra high purity $BaTiO_3$ with La, Ce, Sm, Nb, Ta or Sn. The $BaTiO_3$ is doped in order to make it electrically semi-conductive. In this regards, doping the BaTiO3 replaces lattice barium atoms with other metal atoms (e.g. Ce, La, etc.) resulting in the formation of a material with a different chemical stoichiometry. Moreover, these doped semiconductor materials are not dielectrics. The Examiner's suggestion that the doped $BaTiO_3$ is both semiconducting and dielectric goes against the fundamental teachings known to those skilled in the art. Anti-static fibers and electret fibers are diametrically opposite things.

The one does not support any electrical charge while the other is, by definition, electrically charged. (*See* Exhibit A of the Response mailed February 27, 2001 taken from the 60th Edition of the CRC Handbook of Chemistry and Physics.) Thus the '310 abstract does not teach the use of a ferroelectric material. Furthermore, one skilled in the art would not seek to form an electret and impart a permanent electrostatic charge to

an anti-static fiber. It is the Applicants' contention that the Examiner's rejection of the Claims 50 and 55-67 under 35 U.S.C. §103 over Kawabe in view of the cited Japanese Abstracts is improper and should be withdrawn, as Kawabe teaches away from adding BaTiO3, and there is no suggestion or motivation which would suggest that one skilled in the art would look to Kawabe for a material to which to add the particles in the Japanese Abstracts even if the Examiner's interpretation and resulting conclusions concerning the substitution of semiconductive materials for ferroelectric materials were not erroneous.

Applicants respectfully submit that the present application is in condition of allowance or in the alternative that new Claims 67-70 are also in condition for allowance. Therefore, Applicant requests that the pending rejections be withdrawn and a Notice of Allowance issued.

Should any questions arise with regard to this application the Examiner is encouraged to contact the undersigned at (770) 587-8620. Applicants respectfully request that the Examiner contact Christos Kyriakou at (770) 587-8620 to discuss any pending rejections and to set up an interview to discuss pending rejections.

Please charge any prosecutional fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

Respectfully submitted,
Leonid A. Turkevich et al.

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CERTIFICATE OF MAILING

I, Christos S. Kyriakou, hereby certify that on August 1, 2003 this document is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to: Attention: Office of Petitions; Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By: _____
Christos S. Kyriakou